

What is claimed is:

1. A light emitter comprising:
a tube having a first end and a second end;
a first aperture located proximate said tube first
end;
5 A second aperture located proximate said tube second
end;
a lens located within said tube;
a base mechanism attached to said tube first end,
said base mechanism having a cavity formed therein; and
10 a light path extending between said cavity and said
second aperture, said light path passing through said
first aperture and through said lens.
2. The light emitter of claim 1 and further
comprising a light source located within said base
mechanism cavity, said light source being intersected by
said light path.
3. The light emitter of claim 1, wherein said
first aperture is smaller than said second aperture.
4. The light emitter of claim 1, wherein said
first aperture is formed by a member that partially
encloses said tube first end.
5. The light emitter of claim 4, wherein said
member has a first side facing said tube first end and a
second side facing away from said tube first end, wherein
said first aperture is conical, the portion of said first
5 aperture on said member first side being smaller than the
portion of said aperture on said member second side.

6. The light emitter of claim 1, wherein said lens is a collimating lens.

7. The light emitter of claim 1, wherein said lens is a symmetrical convex lens.

8. The light emitter of claim 1, wherein said lens is an asymmetrical convex lens.

5 9. The light emitter of claim 1, wherein said lens has a focal length associated therewith and further comprising a light source, wherein said light source is located at a preselected location relative to said lens focal length.

5 10. The light emitter of claim 1, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

11. The light emitter of claim 10, wherein said lens abuts said step.

5 12. The light emitter of claim 10, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

13. The light emitter of claim 10, wherein said tube first portion has a length of about 20.9 millimeters.

14. The light emitter of claim 10, wherein said tube second portion has a length of about five millimeters.

15. The light emitter of claim 10, wherein said diameter of said tube first portion is about 7.66 millimeters.

16. The light emitter of claim 10, wherein said diameter of said tube second portion is about 8.65 millimeters.

17. The light emitter of claim 1, wherein said lens has a focal length of about 22.5 millimeters.

18. The light emitter of claim 1, wherein said base mechanism has at least one flexible member extending therefrom, said at least one flexible member having a tab attached thereto.

19. A light sensor comprising:

a light emitter comprising:

a tube having a first end and a second end;

a first aperture located proximate said tube first end;

a second aperture located proximate said tube second end;

a lens located within said tube;

a base mechanism attached to said tube first end, said base mechanism having a cavity formed therein;

a light receiver; and

a light path extending between said cavity and said receiver, wherein said light path passes through said

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A tube first aperture, through said lens, and through said
tube second aperture.

20. The light sensor of claim 19, wherein said cavity has a light source located therein and wherein said light path intersects said light source.

21. The light sensor of claim 20, wherein said light source is adapted to emit light having a preselected band of wavelengths and wherein said light receiver is adapted to detect light having said
5 preselected band of wavelengths.

22. The light sensor of claim 21 and further comprising a light filter located in said light path, said light filter being adapted to pass light having said preselected band of wavelengths.

23. The light sensor of claim 19, wherein said first aperture is smaller than said second aperture.

24. The light sensor of claim 19 wherein said first aperture is formed by a member that partially encloses said tube first end.

25. The light sensor of claim 24 wherein said member has a first side facing said tube first end and a second side facing away from said tube first end, wherein said first aperture is conical, the portion of said first aperture on said member first side being smaller than the
5 portion of said first aperture on said member second side.

26. The light sensor of claim 19, wherein said lens is a collimating lens.

27. The light sensor of claim 19, wherein said lens is a symmetrical convex lens.

28. The light sensor of claim 19, wherein said lens is an asymmetrical convex lens.

29. The light sensor of claim 19, wherein said lens has a focal length associated therewith and further comprising a light source located at a preselected location relative to said lens focal length.

30. The light sensor of claim 19, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

31. The light sensor of claim 30, wherein said lens abuts said step.

32. The light sensor of claim 30, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

33. The light sensor of claim 19, wherein said base mechanism further comprises at least one flexible member, said flexible member having a tab attached thereto.

34. An autochanger comprising:
at least one media holding bay;
a light emitter comprising:
a tube having a first end and a second

5 end;
a first aperture located proximate said
tube first end;
a second aperture located proximate said
tube second end;
10 a lens located in said tube;
a base mechanism attached to said tube
first end, said base mechanism having a cavity
formed therein;
a light source located in said cavity
15 adjacent said first aperture;
a light receiver; and
a light path extending between said light emitter
and said light receiver, at least a portion of said light
path being adjacent said at least one media holding bay.

35. The autochanger of claim 34, wherein said light
source is adapted to emit light having a preselected band
of wavelengths and wherein said light receiver is adapted
to detect light having said preselected band of
5 wavelengths.

36. The autochanger of claim 35 and further
comprising a light filter located in said light path,
said light filter being adapted to pass light having said
preselected band of wavelengths.

37. The autochanger of claim 34, wherein said first
aperture is smaller than said first aperture.

38. The autochanger of claim 34 wherein said first
aperture is formed by a member that partially encloses
said tube first end.

39. The autochanger of claim 38, wherein said

member has a first side facing said tube first end and a second side facing away from said tube first end, wherein said first aperture is conical, the portion of said first aperture on said member first side being smaller than the portion of said aperture on said member second side.

40. The autochanger of claim 34, wherein said lens is a collimating lens.

41. The autochanger of claim 34, wherein said lens is a symmetrical convex lens.

42. The autochanger of claim 34, wherein said lens is an asymmetrical convex lens.

43. The autochanger of claim 34, wherein said lens has a focal length associated therewith and wherein said light source is located at a preselected location relative to said lens focal length.

44. The autochanger of claim 34, wherein said tube has an inner surface, said inner surface having a first portion and a second portion, wherein the diameter of said first portion is different than the diameter of said second portion, and wherein the junction of said first portion and said second portion forms a step.

45. The autochanger of claim 44, wherein said lens abuts said step.

46. The autochanger of claim 44, wherein said lens has a lens surface and a lens edge abutting said lens surface, said lens surface having a flat circumference portion extending from said lens edge, and wherein said lens flat circumference portion abuts said step.

47. The autochanger of claim 34, wherein said base mechanism further comprises a flexible member having a tab attached thereto.

48. An autochanger comprising:
at least one media holding;
means for producing a substantially collimated light beam; and

5 means for detecting said substantially collimated light beam; and

10 a light path associated with said substantially collimated light beam extending between said light emitter and said light receiver, at least a portion of said light path being adjacent said at least one media holding bay.

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